

IN THE CLAIMS:

The following is a complete listing of claims in this application.

1. (currently amended) A crushing apparatus comprising:
a supplying section for receiving a solid material;
at least one crushing section for crushing the material
supplied from the supplying section; and

a discharging section for discharging the material
crushed by the crushing section to outside;

wherein the at least one crushing section is ~~formed by~~
~~partitioning with~~ defined between a rotating disk on a side of
the supplying section and a rotating disk on a side of the
discharging section, the rotating disks being connected to at
least one rotating shaft to be driven to rotate and arranged
at positions spaced apart from each other in an axial
direction;

wherein at least one of the rotating disk on the side of
the supplying section and the rotating disk on the side of the
discharging section is arranged with at least one blade
projected from a face thereof ~~opposed to each other~~ and is
formed with ~~a~~ at least one through hole penetrated in the
axial direction ~~and at~~ a position proximate to a rotational
~~axis center of the rotating disk; and at a position of at~~
~~least one section thereof in a circumferential direction; and~~

wherein ~~a~~ the material supplied from the supplying
section is ~~constituted to be~~ crushed by ~~a crushing operation~~
~~produced in accordance with driving to rotate~~ as the blade in
the crushing section is driven to rotate and the material is
discharged to ~~made to communicate with~~ the side of the
discharging section ~~constituting on~~ a downstream side of the
crushing section via the at least one through hole formed at
the at least one rotating disk;

wherein a guide disk is positioned in parallel to and between the rotating disks and is connected to the rotating shaft of one of the rotating disks so as to rotatably driven, and

wherein the guide disk is formed with a guide face having a shape to guide a powder produced in the crushing section toward the blade as the guide disk rotates.

2. (currently amended) A crushing apparatus comprising: a supplying section for receiving a solid material; at least one crushing section for crushing the material supplied from the supplying section; and

a discharging section for discharging the material crushed by the crushing section to outside;

wherein the at least one crushing section is defined between a rotating disk on a side of the supplying section and a rotating disk on a side of the discharging section, the rotating disks being connected to at least one rotating shaft to be driven to rotate and arranged at positions spaced apart from each other in an axial direction;

wherein at least one of the rotating disk on the side of the supplying section and the rotating disk on the side of the discharging section is arranged with at least one blade projected from a face thereof opposed to each other and formed with a through hole penetrated in the axial direction at a position proximate to a rotational axis center of the rotating disk;

wherein the material supplied from the supplying section is crushed as the blade in the crushing section is driven to rotate and the material is discharged to the side of the discharging section on a downstream side of the crushing section via the at least one through hole formed at the at least one rotating disk; and

~~The crushing apparatus according to Claim 1, constituted such~~

~~that wherein~~ a plurality of the blades are arranged in a circumferential direction about the rotational axis of ~~on the~~ at least one rotating ~~blade disk~~, each of the blades having radially by directing a blade face thereof directed in a the rotational direction of the at least one rotating disk ~~along the circumferential direction centering on the rotational axis center, further,;~~

wherein at a position between the blades contiguous to each other in the circumferential direction, at least one sub-blade is attachably and detachably arranged ~~with at least one sub-blade~~ following the preceding blade immediately ~~therebefore~~ in the rotating direction of the rotating disk, and

wherein a direction of the blade face of the sub-blade relative to the blade face of the preceding blade immediately ~~therebefore is pertinently~~ can be selectively adjusted to any of different directions.

Claim 3 (canceled).

4. (currently amended) The crushing apparatus according any one of Claim 1, herein a peripheral wall face of the crushing section is provided with a guide projection having a shape ~~of~~ constructed and arranged for guiding the powder ~~flowing from an upstream side to a downstream side~~ along the peripheral wall face from the peripheral wall face to an inner side of the crushing section as the powder flows from an upstream side to a downstream side of the crushing section.

5. (previously presented) The crushing apparatus according Claim 1, constituted such that the rotating disk on the side of the supplying section and the rotating disk on the side of the discharging section are respectively connected to at least two rotating shafts driven to rotate by producing a relative rotational speed difference and an interactive application of a crushing force is

produced by the relative rotational speed difference between the two rotating disks.

6. (currently amended) The crushing apparatus according Claim 1, wherein an outer peripheral edge portion of the rotating disk formed to partition the crushing section and the discharging section is attachably and detachably arranged with at least one impact blade ~~having a shape of facing~~ constructed and arranged to face a peripheral wall face of the crushing section, the at least one impact blade being disposed on an outer side in a radius direction of a disk face of the rotating disk on a side of the discharging section ~~thereof at the disk face on the side of the discharging section~~, and a face portion on an outer side in a radius direction of the impact blade opposed to the peripheral wall face is formed with a plurality of escape grooves having a shape penetrated in a rotational direction thereof along the axial direction.

7. (currently amended) The crushing apparatus according Claim 1, wherein the rotating disk for partitioning so as to form the crushing section and the discharging section is attachably and detachably arranged with a classifying blade having a shape projected to a side of the discharging section, and the powder discharged from a gap between an outer peripheral face of the rotating disk and the peripheral wall face of the crushing section is constituted to be sorted from a gap between the classifying blades in a rotational state to be discharged to the discharging section, and ~~a~~ the number of ~~arranging the classifying blades is pertinently adjusted~~ can be selectively changed.

8. (original) The crushing apparatus according to Claim 7, wherein a wall face of the discharging section is further attachably and detachably arranged with a gap-adjusting member for narrowing the wall face and a portion of the classifying blade on a side of a rotating end thereof, and the

gap-adjusting member for adjusting the gap to a predetermined dimension is pertinently selected to arrange.

9. (currently amended) The crushing apparatus according to Claim 7 ~~or~~, wherein a through hole is formed at the rotating disk used for partitioning in order to form the crushing section and the discharging section;

wherein the classifying blade is attached at a position more proximate to the rotational axis center than a position of forming the through hole relative to the rotating disk, and a classifying section for classifying the powder discharged from the through hole is partitioned to form at an outer region in a direction of a rotating radius of the classifying blade; and

wherein the classifying section is arranged with a classifying cylinder formed in a shape of a cylinder along a position between the classifying blade and the peripheral wall face on the outer side in the direction of the rotating radius of the classifying blade.

10. (currently amended) The crushing apparatus according to Claim 9, wherein the classifying cylinder is arranged attachably and detachably to and from the peripheral wall face of the classifying section, and the classifying cylinder ~~having~~ has a shape of enlarging a cylinder diameter from the upstream side to the downstream side, ~~or a shape of making the constant cylinder diameter constant is pertinently selected to be arranged.~~

11. (previously presented) The crushing apparatus according to Claim 9, wherein the classifying cylinder is arranged attachably and detachably to and from the peripheral wall face of the classifying section, and a dimension of a gap between the classifying cylinder and the rotating disk for partitioning to form the crushing section and the discharging section and a dimension of a gap between the classifying

cylinder and the peripheral wall face of the classifying section are pertinently adjusted by a position of attaching the classifying cylinder.

12. (previously presented) The crushing apparatus according to Claim 1, wherein the through hole is formed at the rotating disk for partitioning to form the crushing section and the discharging section; and

wherein the rotating disk is formed with a thick-walled face section for applying a resistance against a flow of the powder discharged from the through hole in accordance with rotating the rotating disk at a disk face thereof on a side of the discharging section, and the thick-walled face portion is constituted by a shape of gradually thickening a wall thickness thereof gradually to an inner side in a radius direction.

13. (new) The crushing apparatus according to Claim 2, wherein a peripheral wall face of the crushing section is provided with a guide projection having a shape capable of guiding the powder along the peripheral wall face from the peripheral wall face to an inner side of the crushing section as the powder flows from an upstream side to a downstream side of the crushing section.

14. (new) The crushing apparatus according to Claim 2, constituted such that the rotating disk on the side of the supplying section and the rotating disk on the side of the discharging section are respectively connected to at least two rotating shafts driven to rotate by producing a relative rotational speed difference and an interactive application of a crushing force is produced by the relative rotational speed difference between the two rotating disks.

15. (new) The crushing apparatus according to Claim 2, wherein an outer peripheral edge portion of the rotating disk formed to partition the crushing section and the discharging

section is attachably and detachably arranged with at least one impact blade constructed and arranged to face a peripheral wall face of the crushing section, the at least one impact blade being disposed on an outer side in a radius direction of a disk face of the rotating disk on a side of the discharging section, and a face portion on an outer side in a radius direction of the impact blade opposed to the peripheral wall face is formed with a plurality of escape grooves having a shape penetrated in a rotational direction thereof along the axial direction.

16. (new) The crushing apparatus according to Claim 2, wherein the rotating disk for partitioning so as to form the crushing section and the discharging section is attachably and detachably arranged with a classifying blade having a shape projected to a side of the discharging section, and the powder discharged from a gap between an outer peripheral face of the rotating disk and the peripheral wall face of the crushing section is constituted to be sorted from a gap between the classifying blades in a rotational state to be discharged to the discharging section, and the number of the classifying blades can be selectively changed.

17. (new) The crushing apparatus according to Claim 2, wherein the through hole is formed at the rotating disk for partitioning to form the crushing section and the discharging section; and

wherein the rotating disk is formed with a thick-walled face section for applying a resistance against a flow of the powder discharged from the through hole in accordance with rotating the rotating disk at a disk face thereof on a side of the discharging section, and the thick-walled face portion is constituted by a shape of gradually thickening a wall thickness thereof gradually to an inner side in a radius direction.

18. (new) The crushing apparatus according to claim 1, wherein the at least one rotating disk is formed with a plurality of the through holes arranged in the circumferential direction.

19. (new) The crushing apparatus according to claim 2, wherein the at least one rotating disk is formed with a plurality of the through holes arranged in the circumferential direction.